

CLAIMS:

1. A method comprising:
 - 2 accumulating pilot symbols of a first wireless signal;
 - accumulating non-pilot symbols of the first wireless signal; and
 - 4 calculating a weighted sum of the accumulated pilot symbols and the accumulated non-pilot symbols to estimate power of the first wireless signal.
2. The method of claim 1, wherein accumulating pilot symbols comprises
 - 2 coherently accumulating a number of pilot symbols corresponding to a slot by summing each of the number of pilot symbols and squaring the sum of the number of
 - 4 pilot symbols.
3. The method of claim 2, wherein accumulating the non-pilot symbols
 - 2 comprises non-coherently accumulating a number of non-pilot symbols corresponding to a slot by squaring each of the number of non-pilot symbols and
 - 4 summing the squares of the number of non-pilot symbols.
4. The method of claim 1, wherein accumulating the non-pilot symbols
 - 2 comprises non-coherently accumulating a number of non-pilot symbols corresponding to a slot by squaring each of the number of non-pilot symbols and
 - 4 summing the squares of the number of non-pilot symbols.
5. The method of claim 1, further comprising comparing the weighted sum to a
 - 2 target value and generating a power control signal based on the comparison.
6. The method of claim 5, further comprising controlling transmission power of
 - 2 a wireless communication device based on the power control signal.
7. The method of claim 5, further comprising controlling transmission power of
 - 2 a base station based on the power control signal.

8. The method of claim 5, further comprising wirelessly communicating a
2 second wireless signal to control transmission power of a wireless communication device, wherein the second wireless signal includes the power control signal.
9. The method of claim 5, further comprising wirelessly communicating a
2 second wireless signal to control transmission power of a base station, wherein the second wireless signal includes the power control signal.
10. The method of claim 1, further comprising determining a weight factor and
2 calculating the weighted sum by summing the accumulated pilot symbols with a result of the weight factor multiplied by the accumulated non-pilot symbols.
11. The method of claim 1, wherein determining the weight factor comprises
2 multiplying a number of pilot symbols in the accumulated pilot symbols by a constant.
12. The method of claim 11, wherein the constant is equal to approximately 0.5.
13. The method 11, wherein determining the weight factor comprises selecting
2 the weight factor from a lookup table.
14. The method 11, wherein determining the weight factor comprises generating
2 the weight factor using an algorithm.
15. The method of claim 1, wherein accumulating non-pilot symbols of the first
2 wireless signal comprises separately accumulating a first number of non-pilot symbols corresponding to a slot and accumulating a second number of non-pilot
4 symbols corresponding to the slot.
16. The method of claim 15, wherein accumulating the first number of non-pilot
2 symbols corresponding to the slot comprises coherently accumulating the first

number of non-pilot symbols corresponding to the slot, and wherein accumulating
4 the second number of non-pilot symbols corresponding to the slot comprises
non-coherently accumulating the second number of non-pilot symbols corresponding
6 to the slot.

17. A computer-readable medium carrying program code that when executed,
2 accumulates pilot symbols of a first wireless signal;
accumulates non-pilot symbols of the first wireless signal; and
4 calculates a weighted sum of the accumulated pilot symbols and the
accumulated non-pilot symbols to estimate power of the first wireless signal.

18. The computer readable medium of claim 17, wherein the program code when
2 executed:
accumulates pilot symbols by coherently accumulating a number of pilot
4 symbols corresponding to a slot by summing each of the number of pilot symbols
and squaring the sum of the number of pilot symbols, and
6 accumulates non-pilot symbols by non-coherently accumulating a number of
non-pilot symbols corresponding to a slot by squaring each of the number of
8 non-pilot symbols and summing the squares of the number of non-pilot symbols.

19. An apparatus comprising:
2 a receiver that receives a wireless signal,
a demodulator that demodulates individual chips of the wireless signal,
4 a symbol generator that groups results of the demodulation into control
symbols, wherein the control symbols include pilot symbols and non-pilot symbols,
6 and
an estimator that calculates an estimate of the power of the wireless signal by
8 separately accumulating the pilot symbols and the non-pilot symbols and calculating
a weighted sum of the accumulated pilot symbols and accumulated non-pilot
10 symbols.

20. The apparatus of claim 19, further comprising:
2 an antenna coupled to the receiver;
a rotator that adjusts the frequency of the wireless signal prior to
4 demodulation; and
a digital signal processor that processes the control symbols.
21. The apparatus of claim 19, further comprising:
2 a comparator that compares the estimate to a target value to determine
whether the power of the wireless signal should be increased or decreased; and
4 a power command generator that generates a command signal to adjust the
power of the wireless signal.
22. The apparatus of claim 21, further comprising a transmitter that transmits a
2 second signal to instruct a device that sent the first signal to adjust its power
according to the command signal.
23. The apparatus of claim 19, wherein the apparatus forms part of a base station
2 in a wireless communication system.
24. The apparatus of claim 19, wherein the apparatus forms part of a wireless
2 communication device in a wireless communication system.
25. The apparatus of claim 19, further comprising:
2 a number demodulators that demodulate individual chips of the wireless
signal received via a number of paths,
4 a number of symbol generators that group results of the demodulations into
control symbols, wherein the control symbols include pilot symbols and non-pilot
6 symbols, and
a number of estimators that respectively calculate estimates of the power of
8 the wireless signal corresponding to each of the number of paths by accumulating the

10 pilot symbols, accumulating the non-pilot symbols and calculating a weighted sum
of the accumulated pilot symbols and accumulated non-pilot symbols.

26. The apparatus of claim 25, further comprising:
2 a register that stores and combines the estimates; and
a comparator that compares the combined estimates to a target value to
4 determine whether the power of the wireless signal should be increased or decreased.

27. A wireless communication system comprising:
2 a wireless communication device that sends a first signal encoded with pilot
and non-pilot symbols; and
4 a base station that receives the first signal, and estimates power of the first
signal by separately accumulating the pilot symbols and the non-pilot symbols and
6 calculating a weighted sum of the accumulated pilot and non-pilot symbols.

28. The wireless communication system of claim 27, wherein the base station
2 compares the estimated power of the first signal to a target value and sends a second
signal back to the wireless communication device to adjust transmit power of the
4 wireless communication device accordingly.

29. A wireless communication system comprising:
2 a base station that sends a first signal encoded with pilot and non-pilot
symbols; and
4 a wireless communication device that receives the first signal, and estimates
power of the first signal by separately accumulating the pilot symbols and the non-
6 pilot symbols and calculating a weighted sum of the accumulated pilot and non-pilot
symbols.

30. The wireless communication system of claim 29, wherein the wireless
2 communication device compares the estimated power of the first signal to a target

- value and sends a second signal back to the base station to adjust transmit power of
- 4 the base station accordingly.

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